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What is claimed is:

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1. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

- a) an amino acid sequence selected from the group consisting of SEQ ID NO:1-25,
- b) a naturally occurring amino acid sequence having at least 90% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NO:1-25.
- c) a biologically active fragment of an amino acid sequence selected from the group consisting of SEQ ID NO:1-25, and
- d) an immunogenic fragment of an amino acid sequence selected from the group consisting of SEQ ID NO:1-25.
 - 2. An isolated polypeptide of claim 1 selected from the group consisting of SEQ ID NO:1-25.
 - 3. An isolated polynucleotide encoding a polypeptide of claim 1.
 - 4. An isolated polynucleotide of claim 3 selected from the group consisting of SEQ ID NO:26-50.
 - 5. A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 3.
 - 6. A cell transformed with a recombinant polynucleotide of claim 5.
 - 7. A transgenic organism comprising a recombinant polynucleotide of claim 5.
 - 8. A method for producing a polypeptide of claim 1, the method comprising:
- a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said
 30 cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and
 - b) recovering the polypeptide so expressed.
- 9. An isolated antibody which specifically binds to a polypeptide of claim 1.



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- 10. An isolated polynucleotide comprising a polynucleotide sequence selected from the group consisting of:
 - a) a polynucleotide sequence selected from the group consisting of SEO ID NO:26-50,
- b) a naturally occurring polynucleotide sequence having at least 90% sequence identity to a polynucleotide sequence selected from the group consisting of SEQ ID NO:26-50,
 - c) a polynucleotide sequence complementary to a),
 - d) a polynucleotide sequence complementary to b), and
 - e) an RNA equivalent of a)-d).

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- 10 11. An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 10.
 - 12. A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 10, the method comprising:
 - a) hybridizing the sample with a probe comprising at least 16 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization complex is formed between said probe and said target polynucleotide, and
- b) detecting the presence or absence of said hybridization complex, and, optionally, if 20 present, the amount thereof.
 - 13. A method of claim 12, wherein the probe comprises at least 30 contiguous nucleotides.
 - 14. A method of claim 12, wherein the probe comprises at least 60 contiguous nucleotides.
 - 15. A pharmaceutical composition comprising an effective amount of a polypeptide of claim 1 and a pharmaceutically acceptable excipient.
- 16. A method for treating a disease or condition associated with decreased expression of30 functional EXMAD, comprising administering to a patient in need of such treatment thepharmaceutical composition of claim 15.
 - 17. A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:
 - a) exposing a sample comprising a polypeptide of claim 1 to a compound, and

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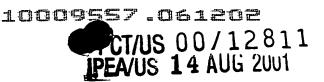
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- b) detecting agonist activity in the sample.
- 18. A pharmaceutical composition comprising an agonist compound identified by a method of claim 17 and a pharmaceutically acceptable excipient.
- 19. A method for treating a disease or condition associated with decreased expression of functional EXMAD, comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 18.
- 20. A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:
 - a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
 - b) detecting antagonist activity in the sample.
- 15 21. A pharmaceutical composition comprising an antagonist compound identified by a method of claim 20 and a pharmaceutically acceptable excipient.
 - 22. A method for treating a disease or condition associated with overexpression of functional EXMAD, comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 21.
 - 23. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a sequence of claim 4, the method comprising:
 - a) exposing a sample comprising the target polynucleotide to a compound, and
 - b) detecting altered expression of the target polynucleotide.





- b) detecting agonist activity in the sample.
- 18. A pharmaceutical composition comprising an agonist compound identified by a method of claim 17 and a pharmaceutically acceptable excipient.

19. A method for treating a disease or condition associated with decreased expression of functional EXMAD, comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 18.

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- 20. A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:
 - a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
 - b) detecting antagonist activity in the sample.

- 21. A pharmaceutical composition comprising an antagonist compound identified by a method of claim 20 and a pharmaceutically acceptable excipient.
- 22. A method for treating a disease or condition associated with overexpression of functional EXMAD, comprising administering to a patient in need of such treatment a pharmaceutical composition of claim 21.

23. A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a sequence of claim 4, the method comprising:

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- a) exposing a sample comprising the target polynucleotide to a compound, and
- b) detecting altered expression of the target polynucleotide.

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- 24. An solated polynucleotide encoding a polypeptide of claim 2.
- 25. A method of detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 10, the method comprising:
 - a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and
 - b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.
- 26. A composition of claim 15, wherein the polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO:1-25.
 - 27. A method of screening for a compound that specifically binds to the polypeptide of claim 1, the method comprising:
 - a) combining the polypeptide of claim 1 with at least one test compound under suitable conditions, and
 - b) detecting binding of the polypeptide of claim 1 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 1.
- 28. A method of screening for a compound that modulates the activity of the polypeptide of claim 1, the method comprising:
 - a) combining the polypeptide of claim 1 with at least one test compound under ... conditions permissive for the activity of the polypeptide of claim 1,
 - b) assessing the activity of the polypeptide of claim 1 in the presence of the test compound, and
 - c) comparing the activity of the polypeptide of claim 1 in the presence of the test compound with the activity of the polypeptide of claim 1 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 1 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 1.
 - 29. A method of assessing toxicity of a test compound, the method comprising:
 - a) treating a biological sample containing nucleic acids with the test compound,
 - b) hybridizing the nucleic acids of the treated biological sample with a probe

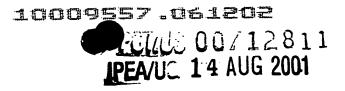
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comprising at least 20 contiguous nucleotides of a polynucleotide of claim 10 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 10 or fragment thereof,

- c) quantifying the amount of hybridization complex, and
- d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.
- 30. A diagnostic test for a condition or disease associated with the expression of EXMAD in a biological sample, the method compfising:
 - a) combining the biological sample with an antibody of claim 9, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex, and
 - b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.
- 20 31. The antibody of claim 9, wherein the antibody is:
 - a) a chimeric antibody,
 - b) a single chain antibody,
 - c) a Fab fragment,
 - d) a F(ab')₂ fragment, or
- e) a humanized antibody.
 - 32. A composition comprising an antibody of claim 9 and an acceptable excipient.
- 33. A method of diagnosing a condition or disease associated with the expression of
 EXMAD in a subject, comprising administering to said subject an effective amount of the composition of claim 32.
 - 34. A composition of claim 32, wherein the antibody is labeled.

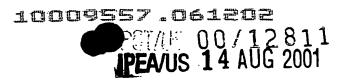
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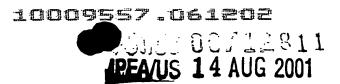


- 35. A method of diagnosing a condition or disease associated with the expression of EXMAD in a subject, comprising administering to said subject an effective amount of the composition of claim 34.
- 5 36. A method of preparing a polyclonal antibody with the specificity of the antibody of claim 9, the method comprising:
 - a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
- b) isolating antibodies from said animal, and
 - c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25.
- 15 37. An antibody produced by a method of claim 36.
 - 38. A composition comprising the antibody of claim 37 and a suitable carrier.
- 39. A method of making a monoclonal antibody with the specificity of the antibody of claim 20 9, the method comprising:
 - a) immunizing an animal with a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
 - b) isolating antibody producing cells from the animal,
- 25 c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells,
 - d) culturing the hybridoma cells, and
 - e) isolating from the culture monoclonal antibody which binds specifically to a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25.
 - 40. A monoclonal antibody produced by a method of claim 39.
 - 41. A composition comprising the antibody of claim 40 and a suitable carrier.

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- 42. The antibody of claim 9, wherein the antibody is produced by screening a Fab expression library.
- 43. The antibody of claim 9, wherein the antibody is produced by screening a recombinant 5 immunoglobulin library.
 - 44. A method of detecting a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25 in a sample, the method comprising:
 - a) incubating the antibody of claim 9 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
 - b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25 in the sample.
- 45. A method of purifying a polyperhide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-25 from a sample, the method comprising:
 - a) incubating the antibody of claim 9 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) separating the antibody from the sample and obtaining the purified polypeptide
 having an amino acid sequence selected from the group consisting of SEQ ID NO:125.
 - 46. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:1.
- 25 47. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:2.
 - 48. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:3.
 - 49. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:4.
 - 50. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:5.
 - 51. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID
- 35 NO:6.



52. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID

NO:7.

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- 5 53. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:8.
 - 54. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:9.
 - 55. A polypephide of claim 1, comprising the amino acid sequence of SEQ ID NO:10.
 - 56. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:11.
 - 57. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:12.
- 15 58. A polypeptide of clarm 1, comprising the amino acid sequence of SEQ ID NO:13.
 - 59. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:14.
 - 60. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:15.
 - 61. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:16.
 - 62. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID
- 25 NO:17.
- 63. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:18.
- 64. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:19.
- 65. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:20.
- 66. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:21.
- 35 67. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:22.



- 68. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:23.
- 69. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:24.
- 5 70. A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:25.
 - 71. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:26.
 - 72. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:27.
- 73. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:28.
 - 74. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:29.
- 75. A polynucleotide of claim 0, comprising the polynucleotide sequence of SEQ ID NO:30.
 - 76. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:31.
 - 77. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:32.
- 78. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID 30 NO:33.
 - 79. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:34.

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NO:35		A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:36.		A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:37.		A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:38.		A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:39.		A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:40.	85.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:41.	86.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:42.	87.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:43.	88.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:44.	89.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:45.	90.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
NO:46.	91.	A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
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- 92. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:47.
 - 93. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID
- 5 NO:48.
 - 94. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:49.
- 95. A polynucleotide of claim 10, comprising the polynucleotide sequence of SEQ ID NO:50.